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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/510,562

10/07/2004

Klaus Kneller

12604/10

4036

26646 7590 12/23/2008

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NEW YORK, NY 10004

EXAMINER

MCCLLOUD, RENATA D

ART UNIT

PAPER NUMBER

2837

MAIL DATE

DELIVERY MODE

12/23/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/510,562	KNELLER, KLAUS	
	Examiner	Art Unit	
	RENATA MCCLOUD	2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 December 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 28-56 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 39 and 56 is/are allowed.
- 6) ☒ Claim(s) 28-38 and 40-55 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/1/08</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 28-35,38, 40-43,48-55 rejected under 35 U.S.C. 103(a) as being unpatentable over Ikeshita (US 5631813) in view of Bailey et al (US 4904918).

Claims 28,48,53: Ikeshita teaches in a first embodiment at least one supply module (1/5) providing an intermediate voltage; a drive circuit comprising at least one inverter (9) to drive at least one motor (3); a buffer (7) to store energy; a bus system (the lines connecting the circuit together). Although implicitly taught, Ikeshita does not explicitly recite in the first embodiment, a power cable electrically connecting the supply module to the buffer module, the buffer supplied with energy when the intermediate circuit voltage exceeds a first critical value and regenerative power of a first drive module exceeds the power of a second drive module to store the supplied energy, and supply the stored energy to at least one drive module when a motive power of the at least one drive module exceeds the regenerative power to power the corresponding motor. Ikeshita teaches in the background of the invention a circuit well known in the art comprising a power supply having cables (col. 4:60-67) at least one supply module (1/5) providing an intermediate voltage; a drive circuit comprising at least one inverter (9) to drive at least one motor (3); a buffer (7) to store energy (col. 1:30-50,2:22-33); a bus system (the lines connecting the circuit together) the buffer (7) supplied with energy when the intermediate circuit voltage exceeds a first critical value and regenerative power of a first drive module exceeds the

Art Unit: 2837

power of a second drive module, and feeds back energy to at least one drive module when a motive power of the at least one drive module exceeds the regenerative power to power the corresponding motor (col. 2:34-3:32; 4:13-32). Bailey et al teach that by bars or cables may be used to connect components (col. 7:4-15) It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus taught by Ikeshita et al to operate as taught by the background of the invention and to connect the soupy to the buffer with cables as taught by Bailey et al in order to control and brake the motor(s).

Ikeshita and Bailey et al teach the limitations of claims 28,48, and 53. Ikeshita also teaches:

Claims 29, 49: the motor includes one of a synchronous and an asynchronous motor (col. 2:16-21, induction motor).

Claim 30: the buffer (7) is supplied with energy for periods of time and releases the energy to the driver (9; col. 2:22-33).

Claim 31: the buffer (7) is supplied with energy during regenerative operation of the driver and releases the energy to the driver (9; col. 2:45-57).

Claims 32 and 33: the supply module (1/5) includes a rectifier (5).

Claims 34, 35: the supply module (1/5) includes a feedback unit (col. 2:45-57)

Claim 38: the buffer module includes a capacitor (7) having a capacitance greater than a sum of capacitance of all other capacitors to which the intermediate circuit voltage is applied (there are no other capacitors, so the sum would be 0).

Claim 40: the buffer (7) is connected to an output of the supply module (1/5), the buffer including a capacitor (7) having a charging current influencable by a circuit breaker (8).

Claim 41: a buffer including an electrolytic capacitor (7).

Art Unit: 2837

Claim 50: the buffer (7), driver (9), and supply module (1/5) are connected through to a bus (lines connecting the circuit together).

Claim 51: another module (18) connected to the bus system.

Claim 52: the buffer, driver, and supply modules are in the same interface (Fig. 1).

Claim 42: Ikeshita and Bailey et al teach the limitations of claim 28. Referring to claim 42, they do not explicitly recite that the buffer and supply module are in separate housings. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use separate housing since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. (see MPEP 2144.04 (5)(C)). Also a method of forming the device is not germane to the issue of patentability of the device itself. Therefore the limitation "manufactured separately" has not been given patentable weight.

Claim 43: Ikeshita and Bailey et al teach the limitations of claim 28, Referring to claim 43 they do not explicitly teach the buffer and supply module are integrated and arranged in a single housing. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the buffer and supply modules integrated since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art (see MPEP 2144.04(5)(B))

Claims 54,55: Ikeshita and Bailey teach the limitations of claim 53, referring to claims 54, 55 Ikeshita teaches when the intermediate circuit voltage exceeds a critical value flowing current through a braking resistor to dissipate energy when a regenerative power of a first drive module exceed the power of a second drive module ((col. 2:34-63). They do not teach a second critical value. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus taught by Ikeshita and Bailey to have

Art Unit: 2837

plural critical values since it has been held that mere duplication involves only routine skill in the art (see MPEP 2144.04 (VI))

3. Claims 36,37, 44-47 rejected under 35 U.S.C. 103(a) as being unpatentable over Ikeshita (US 5631813) and Bailey et al and further in view of Takagi et al (US 6367273)

Claim 36, 44: Ikeshita and Bailey et al teach the limitations of claims 28, 43. Referring to claims 36, 44, Ikeshita teaches the buffer/supply module includes a switch (8) to allow passage of and block current induced by the intermediate circuit voltage (col.1:30-39, 2:23-33). They do not teach an electronic circuit breaker. Takagi et al teach a buffer/supply module having an electronic circuit breaker (27) allowing passing and blocking of current (col. 6:15-42). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus taught by Ikeshita and Bailey et al to have an electronic circuit breaker as taught by Takagi et al in order to control the current to the motor.

Claim 37,45,46: Ikeshita, Bailey et al and Takagi et al teach the limitations of claims 36, 44. Referring to claims 37, 45, 46, Ikeshita teaches a switch (8) is connected to an intermediate voltage/current measuring device (71). Takagi et al teach a circuit breaker (27) having a driver (205), the breaker connected to a device (28) measuring an intermediate current (col. 39-42).

Claim 47: Ikeshita and Bailey et al teach the limitations of claim 28. Referring to claim 47, Ikeshita teaches the buffer includes a switch (8) and a circuit connected to a device measuring voltage (22), the switch influencing current supply to a braking resistor (6). Ikeshita and Bailey et al do not teach the buffer includes an electronic circuit breaker and drive circuit connected to a voltage measuring circuit the circuit breaker configured to influence supply to a braking resistor. Takagi et al teach the buffer (5) includes a circuit breaker (27) and drive circuit

Art Unit: 2837

(205) connected to a voltage measuring circuit (50) the circuit breaker (27) configured to influence supply to a braking resistor (111). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus taught by Ikeshita and Bailey et al to include the circuit taught by Takagi et al an order to control the breaking of the motor.

Allowable Subject Matter

4. Claims 39 and 56 are allowed.

Response to Arguments

5. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RENATA MCCLOUD whose telephone number is (571)272-2069. The examiner can normally be reached on Mon.- Fri. from 5:30 am - 2pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Benson can be reached on (571) 272-2800 ext. 37. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2837

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Renata McCloud/
Examiner, Art Unit 2837